

- 1 -

GARMENT HANGER END-CLIP HAVING A STOP  
MEMBER, AND METHOD OF MANUFACTURE

CLAIM FOR PRIORITY

[0001] This application is related to and claims priority of U.S. Provisional Application Serial Nos. 60,411,798, filed September 17, 2002 and 60,411,799, filed September 17, 2002.

BACKGROUND OF THE INVENTION

[0002] The present invention relates to garment hangers and more particularly to end-clips for garment hangers which can include a retention means or stop member which allows for improved retention of garments such as undergarments, e.g., bras and underpants.

[0003] Examples of garment hangers that can be used with the present invention include, but are not limited to, those shown and described in U.S. Patent Nos. 4,629,102, 4,828,155, 5,632,423 and 6,357,638. The disclosures of these patents are incorporated by reference herein. In these hangers, for example, the strap of a bra is secured in the hanger end-clip between a pressing member and an elongated bar portion of the hanger.

[0004] Referring now to Fig. 1 which shows an end-clip 16 of a hanger, a problem of the hangers discussed above is that the strap of a garment can get caught in area A near a pressing member 18. To solve that problem, U.S. Patent No. 5,632,423, for example, inserted a stop formation 38 to be substantially aligned with pressing member 18 so that when a garment strap is inserted in the hanger in an area

32 between pressing member 18 and an elongated bar portion 14 of the hanger, the stop formation 38 blocked the garment strap from traveling into area A.

[0005] Thus, as evidenced by U.S. Patent No. 5,632,423, it is desirable to have a hanger that can accommodate both thick and thin garments, as well as a variety of materials, and in addition, which can retain these garments in their proper position once arranged on the hanger.

[0006] U.S. Patent No. 6,357,638 claims a stop formation that is not located substantially adjacent to the end of the pressing member. The patent further claims instead, that the stop formation is located above the inner arm, along the trajectory of the outer end of the inner arm, so as to block access along a predetermined path or trajectory described by the end of the inner arm, as it flexes upwardly in response to the presence of a narrow strip. The patent goes on to claim that by moving the stop formation upwardly, they block access to the inner space when the inner arm is flexed upwardly.

#### SUMMARY OF THE INVENTION

[0007] It is therefore an object of the present invention to provide a garment hanger having a gripping mechanism, as well as an optional stop member for retaining the garment in a desired position within the gripping mechanism.

[0008] The garment hanger has garment support means which are located at the ends of a bar which includes a means for suspending the bar from a support or rack. The garment support means or clip include a connecting part, an arm, a carrier element, and an elongated stiff pressing member. The connecting part is joined at one end to the bar and at the other end to the arm which extends in a direction towards the center of the bar. The arm has a free end which forms a space between the arm and the bar. The carrier element is located at the end of the arm away from the connecting part on the side which faces towards the bar. The elongated stiff

pressing member is supported by the carrier element so that the pressing member is biased towards the bar by the arm and so that a part of a garment is receivable in between the pressing member and the bar. In addition, the pressing member is generally in the form of an elongated beam which is substantially, centrally and pivotally supported by the free end of the associated carrier element. Finally, the part which is of reduced width in relation to the connecting part is located on the side of the connecting part which faces toward the carrier element. This part of reduced width crosses the part to bias the carrier element and the pressing member toward the bar during post-loading shrinkage. This reduced-width part results in an increase in the tension of the garment due to decrease in the space between the bar and the pressing member. The pressing member and the carrier element have selectively strengthened locations.

[0009] The garment support means can further include a stop member which is positioned on the connection part of the arm on the side facing the pressing member. This stop member maintains the position of the garment between the pressing member and the bar by preventing the garment from moving around the end of the pressing member into the space between the pressing member and the bar.

[0010] Other features and advantages of the present invention will be apparent from the following description of the invention which refers to the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The invention will now be described by way of example with reference to the accompanying schematic drawings:

[0012] FIGURE 1 is a detailed diagram of a prior art garment support means at one end of the bar of a garment hanger;

[0013] FIGURE 2 is a detailed diagram of garment support means pursuant to the present invention.

[0014] FIGURES 3 and 4 show various embodiments of garment support means which can be provided at the end of a garment hanger bar;

[0015] FIGURE 5 shows the embodiment of Figure 2 in a rest condition and a use condition;

[0016] FIGURE 6 is a view as in Figure 5 of the embodiment in Figure 4;

[0017] FIGURES 6A and 6B are detailed views of Figure 6 showing the stop member in the rest condition and the use condition;

[0018] FIGURE 7 is a view as in Figure 5 of the embodiment in Figure 3;

[0019] FIGURES 8-14 show various embodiments of the stop member which can be provided on the garment support clip;

[0020] FIGURE 15 is a front view of a garment hanger with an end-clip that can be used in accordance with the present invention; and

[0021] FIGURE 16 shows another embodiment of an end-clip without a stop member and with reinforced or thickened elements.

#### DETAILED DESCRIPTION OF THE EMBODIMENTS

[0022] Referring to Figures 2-7, an exemplary end-clip 56 is shown which is attached to the ends of a bar 54 of a garment hanger. The end-clip 56 includes a stop formation 50 according to the present invention. It should be realized by those skilled in the art that the stop member of the present invention can be used in connection with any other end-clip formation including, but not limited to, the exemplary end-clips shown in Figs. 3, 4, 7 and 15.

[0023] The end-clip or support means 16 includes a stiff garment pressing member 52. In Figure 2, the pressing member 52 is substantially centrally supported

by a carrier 20. The carrier 20 is joined by a spring arm 22 which ends in a laterally directed connecting part 24 which in turn is joined to the bar 54.

**[0024]** The pressing member 52 has an outwardly curved end 26 and at its opposite end terminates into an at least partially curved head 30. A gap or area B for inserting a garment is defined between the pressing member 52 and the bar 54.

**[0025]** The stop member 50 is provided on the inside face of the connecting part 24. As shown in Figure 2, the stop member 50 is located above the pressing member 52. The stop member 50 is arranged so that when the garment is inserted into the area B, the pressing member 52 abuts against the stop member 50 to completely block access of a garment into the area A. This can be seen more clearly in Figures 5, 6, 6A, 6B and 7, in which the dashed lines show how different end-clips operate when a garment is inserted into the area B. As can be seen in these figures, when pressing member 52 abuts against stop member 50 when a garment is inserted into area B, the garment is blocked by pressing member 52 and the junction area 51 between pressing member 52 and the stop formation 50. This prevents a thin garment, such as a thin garment strap from traveling into area A. With some of the prior art end-clips, where a tip of the pressing member aligns with, but does not abut, the stop formation after the garment is inserted in the end-clip, a thin strap may still tend to slip into area A if there is a large enough gap between the pressing member and the stop formation.

**[0026]** As stated previously, it is preferred that the pressing member 52 is stiff, but pivotable about the carrier 20. The arm 22 and the connecting part 24 are flexible so that a spring effect is produced. In other words, if pressure is applied on the pressing member 52 when inserting a garment, the gap B widens, the pressing member 52 pivots about the carrier 20 according to the position of the force applied on it and the arm 22 and connecting part 24 flexes to allow the gap B to widen as is required.

**[0027]** As shown in Figure 2, the stop member 50 is a cantilever member that extends at an angle from the connecting part 24 downward toward the pressing member 52. The distal end of the stop member 50 which is nearest the pressing member 52 is curved upwardly so as to provide a rounded surface for engagement with the pressing member 52.

**[0028]** The stop member 50 can be made of any material, e.g., a rigid or flexible plastic material, so long as it acts in conjunction with the pressing member 52 to prevent the strap of a garment, for example, from traveling into area A. Preferably, the stop member 50 is made of a resilient or spring-like material so that when a garment is inserted into area B and the pressing member 52 abuts against the stop member 50, the stop member 50 exerts a force towards the pressing member 52 to more securely retain the garment in the area B between the pressing member 52 and the bar 54.

**[0029]** The exemplary embodiment shown in Figure 3 functions in substantially the same fashion as the embodiment of Figure 2. In Figure 3, however, the carrier 20' has a curved shape. Figure 7 shows the clip of Figure 3 in a rest condition shown in solid lines and a condition in which a garment is inserted in the gap B so that the pressing member 52 is pushed upward so as to engage the stop member 50.

**[0030]** Figure 4 shows yet another exemplary embodiment of an end-clip in which the curved end 26' of the pressing member 52 is connected to the end of the spring arm 22 opposite the connecting part 24. Figure 6 shows in dashed lines the position of the pressing member 52 when a garment is inserted in the gap B. Furthermore, Figure 6A shows the initial, rest position of the free end of the pressing member 52 and Figure 6B shows the use condition in which the pressing member 52 is in contact with the stop member 50.

[0031] From the above embodiments it is thus apparent that the stop member 50 can be used in connection with a wide variety of end-clips which can have varying configurations.

[0032] Additionally, the stop member itself can have various configurations which fulfill the objectives of the invention. See the exemplary embodiments of Figures 8-14. As shown in Figure 8, the stop member 50a has a wave-shape. To facilitate contact with the stop member 50a, the pressing member 52a at its free end has a rounded head, as opposed to the partially rounded head shown in Figures 1-7.

[0033] In Figure 9, the stop member 50b projects substantially perpendicularly from the connecting part 24. The stop member 50b is arranged at a distance from the pressing member 52a so that when a garment is inserted the curved head of the pressing member 52a contacts and presses against the stop member 50b.

[0034] The embodiment in Figure 10 shows a stop member 50c which has a downwardly directed element at its free end for contact with the curved head of the pressing member 52a.

[0035] In Figure 11, the stop member projects downwardly at an angle from the spring arm 22 rather than from the connecting part 24. The stop member 50d is angled and of a length so that the curved head of the pressing member 52a contacts the stop member 50d when a garment is inserted in area B.

[0036] A stop member 50e in Figure 12 projects perpendicularly, downwardly from the spring arm 22 so that the curved head of the pressing member 52a engages the end surface of the stop member 50e.

[0037] In Figure 13, there is shown a stop member 50f which is arranged in the corner formed by the spring arm 22 and the connecting part 24. The stop member 50f is shaped so that the curved head of the pressing member 52a contacts at

least a portion of the stop member 50f to prevent passage of a garment strap to the area A.

[0038] Stop member 50g illustrated in Figure 14 projects laterally from the connecting part 24 and is shaped so as to have a thickness that increases toward the distal end of the stop member 50g. The stop member 50g is shaped and arranged so that the curved head of the pressing member 52a is contactable therewith when a garment is inserted in area B.

[0039] In all of the exemplary embodiments shown in Figures 8-14, the stop member 50a-g works in conjunction with the pressing member 52 to block access to the area A after a garment has been inserted in the area B.

[0040] Referring now to Figure 16, an end-clip 60 is shown which has a pressing member 62 and a carrier 64. To this extent, the clip is similar to that shown in Figure 2. However, in the embodiment in Figure 16, the pressing member 62 and the carrier 64 are selectively strengthened at locations 66, 68 by methods known in the art. These strengthened locations are on the surfaces of the pressing member 62 and the carrier 64 which bound the space A within the clip. As shown in Figure 16, the strengthened locations are in the region of the corner between the pressing member 62 and the carrier 64. The strengthening can be done, for example, by thickening the plastic of the members as required. This thickening balances the amount of pressure applied at the points E and F when a garment is inserted into the area C. This encourages the pressing member 62 to be more effective at its weakest end F.

[0041] Although shown without a stop arrangement, it is possible to add a stop arrangement in the embodiment of Figure 16, if desired.

[0042] Although the present invention has been described in relation to particular embodiments thereof, many other variations and modifications and other uses will become apparent to those skilled in the art.